

## WHAT IS CLAIMED IS:

1. A vehicle navigation system comprising:  
a processor operable to store an HOV restriction value for a section of road and operable to receive information regarding a number of occupants in the vehicle; and  
5 where the processor is configured to compare the number of occupants in the vehicle to the HOV restriction value of the section of road.
2. The vehicle navigation system of Claim 1 further comprising a seat occupancy sensor operable to generate a signal indicating whether a seat is occupied.
- 10 3. The vehicle navigation system of Claim 2 where the seat occupancy sensor provides the signal to the processor.
4. The vehicle navigation system of Claim 1 where a user provides information to the  
15 processor regarding the number of occupants in the vehicle.
5. The vehicle navigation system of Claim 1 where the HOV restriction value for a section of road is provided via wireless connection.
- 20 6. The vehicle navigation system of Claim 1 where the processor determines a route as a function of the comparison of the number of occupants in the vehicle to the HOV restriction value of the section of road.
7. The vehicle navigation system of Claim 1 further including a display coupled to  
25 the processor, where the processor generates a map indicating the existence of an HOV restriction value for a section of road and displays the map on the display.

8. The vehicle navigation system of Claim 1 further including a speaker coupled to the processor, where the processor generates a sound indicating the existence of an HOV restriction value for a section of road and plays the sound via the speaker.

5 9. The vehicle navigation system of Claim 1 further including a speaker coupled to the processor, where the processor generates a sound played via the speaker indicating a route recommendation based on the comparison.

10. A navigation system for a vehicle comprising:  
10 a seat occupancy sensor coupled to a seat in the vehicle and operable to generate an occupancy signal indicating whether the seat is occupied; and  
a processor coupled to the seat occupancy sensor and operable to store a high occupancy vehicle restriction value for a section of road;  
where the processor is configured to receive the occupancy signal, determine a  
15 number of occupants in the vehicle based on the occupancy signals, and compare the number of occupants in the vehicle to the high occupancy vehicle restriction value for the section of road.

11. The navigation system of Claim 10, where the processor determines a route to a  
20 destination as a function of the number of occupants in the vehicle and the high occupancy vehicle restriction value for the road.

12. The navigation system of Claim 10 further including a display coupled to the processor, where the processor generates a map indicating the high occupancy vehicle  
25 restriction value for the section of road and displays the map on the display.

13. The navigation system of Claim 10 further including a speaker coupled to the processor, where the processor generates a sound indicating the high occupancy vehicle restriction value for the section of road, and plays the sound via the speaker.

14. The navigation system of Claim 10 further including a speaker coupled to the processor, where the processor generates a sound played via the speaker indicating a route recommendation based on the comparison of the number of occupants to the high occupancy vehicle restriction value.

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15. A method for navigating a vehicle, the method comprising:  
retrieving a high occupancy vehicle restriction value for a section of road;  
receiving an occupancy signal from a seat occupancy sensor indicating whether a  
seat in the vehicle is occupied;

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determining a number of occupants in the vehicle based on the occupancy signal;  
and

determining whether the vehicle is authorized to traverse the section of road based on a comparison of the high occupancy vehicle restriction value to the number of occupants.

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16. The method of Claim 15 further comprising the step of storing the high occupancy vehicle restriction value.

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17. The method of Claim 15 further comprising storing a digital map that includes the high occupancy vehicle restriction value.

18. The method of Claim 15 where determining whether the vehicle is authorized includes determining whether the number of occupants is at least equal to the high occupancy vehicle restriction value.

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19. The method of Claim 15 further comprising determining a route to a destination based on the comparison.

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20. The method of Claim 15 further comprising determining a route that includes the section of road where the vehicle is authorized to traverse the section of road.

21. The method of Claim 15 further comprising determining a route that excludes the section of road where the vehicle is not authorized to traverse the section of road.

5 22. The method of Claim 15 further comprising generating a map indicating the existence of the high occupancy vehicle restriction value for the section of road, and displaying the map on a display.

10 23. The method of Claim 15 further comprising generating a sound indicating the existence of the high occupancy vehicle restriction value for the section of road, and playing the sound via a speaker.

15 24. The method of Claim 15 further comprising generating a sound indicating the vehicle is not authorized to traverse the section of road based on the comparison, and playing the sound via a speaker.

25. A navigation system for a vehicle comprising:  
a seat occupancy sensor;  
a processor coupled to the seat occupancy sensor, the processor having a program  
20 of instructions comprising:  
instructions to retrieve a high occupancy vehicle restriction value for a  
section of road;  
instructions to receive an occupancy signal from the seat occupancy sensor;  
instructions to determine a number of occupants in the vehicle based on the  
25 occupancy signal;  
instructions to compare the high occupancy vehicle restriction value to the  
number of occupants; and  
instructions to determine whether the vehicle is authorized to traverse the  
section of road based on the comparison.

26. The navigation system of Claim 25 where the processor includes a digital map that includes the existence of the high occupancy vehicle restriction value for the section of road.

5 27. The navigation system of Claim 25 where the program of instructions further comprises instructions to determine a route based on whether the vehicle is authorized to traverse the section of road.

10 28. The navigation system of Claim 25 further comprising a display coupled to the processor, where the program of instructions further includes instructions to generate a map indicating the high occupancy vehicle restriction value for the section of road and to display the map on the display.

15 29. The navigation system of Claim 25 further including a speaker coupled to the processor, where the program of instructions further comprises instructions to generate a sound indicating the existence of the high occupancy vehicle restriction value for the section of road, and to play the sound via a speaker

20 30. The navigation system of Claim 25, further including a speaker coupled to the processor, where the program of instructions further comprises instructions to generate a sound indicating the vehicle is not authorized to traverse the section of road, and to play the sound via a speaker.

25 31. A vehicle navigation system comprising:  
a means for storing an HOV restriction value for a section of road;  
a means for receiving information regarding a number of occupants in the vehicle;  
and  
a means for comparing the number of occupants in the vehicle to the HOV restriction value of the section of road.

32. The vehicle navigation system of Claim 31 further comprising a means for generating a signal indicating whether a seat is occupied.

33. The vehicle navigation system of Claim 31 further comprising a means for  
5 providing information indicating whether the seat is occupied to the processor.

34. The vehicle navigation system of Claim 31 where the means for comparing further determines a route as a function of the comparison of the number of occupants in the vehicle to the HOV restriction value of the section of road.

10 35. The vehicle navigation system of Claim 34 further including a means for providing information to an occupant of the vehicle regarding the route.

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